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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/902,502 | 07/09/2001 | Kenneth A. Goldberg | LBL-CIB-1572 | 5914 |

7590 12/22/2003
John P. O'Banion
O'BANION & RITCHEY LLP
Suite 1550
400 Capitol Mall
Sacramento, CA 95814

EXAMINER

LABAZE, EDWYN

ART UNIT PAPER NUMBER

2876

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,502

Applicant(s)

GOLDBERG, KENNETH A.

Examiner

EDWYN LABAZE

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Receipt is acknowledged of amendments filed on 9/30/2003.
2. Claims 1-39 are presented for examination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bokor et al. (U.S. 6,555,828) in view of Sweatt et al. (U.S. 6,285,497).

Re claims 1, 7, 13, 18, 23, 29, and 35: Bokor et al. discloses method of apparatus for inspecting reflection masks for defects, which includes an extreme ultraviolet lithography or EUV light source (col.2, lines 55-67), wherein the EUV is a synchrotron (col.9, lines 17+), and a detector 20 (col.3, lines 2+), means for directing the EUV light to the mask (col.2, lines 5+ and col.8, lines 66+), further comprising an EUV light source positioned to direct a beam light (col.9, lines 23+) and analyzing the recorded reflections to determine the presence of defects (col.8, lines 65-67 and col.9, lines 1+). The examiner is broadly interpreted a mask blank as a piece of glass without a color filter used to reflect a light source.

Bokor et al. fails to teach a CCD camera.

Sweatt al. discloses diffractive element in extreme-UV lithography condenser, which includes means for simultaneously imaging/camera 77 multiple points in an area of a mask blank

using reflections of light from a light source impinging on the mask blank (as shown in fig. # 6A of Sweatt et al.; col.12, lines 10).

In view of the teachings of Sweatt et al., it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ an a CCD/ringfield camera into the teachings of Bokor et al. in order to record the reflected EUV from the mask blank. Furthermore, the use of the CCD/ringfield camera would have been an improvement of the teaching of Bokor et al. by comparing pixel data related to the EUV image either to data corresponding of other portions of the image or to stored data from previous image. Moreover, such modification would have been an obvious extension as taught by Bokor et al., therefore an expedient.

Re claims 2, 8, 14, 19, 24, 30, and 36: Bokor et al. discloses and apparatus and method, wherein the EUV comprising a synchrotron (col.9, lines 17+).

Re claims 3, 9, 25, and 31: Bokor et al. teaches an apparatus and method, wherein means for imaging comprises a EUV detector 20 (col.3, lines 2+).

Re claims 4, 10, 15, 20, 26, 32, and 37: Bokor et al. discloses an apparatus and method, wherein the detector comprises a CCD camera array 4 (col.11, lines 28+).

Re claims 5, 11, 16, 21, 27, 33, and 38: Bokor et al. discloses and apparatus and method, wherein the EUV comprising a micro-channel plate (col.4, lines 32-62).

Re claims 6, 12, 17, 23, 28, 34, and 39: Bokor et al. teaches and apparatus and method, further comprising a pinhole aperture 46 positioned between the EUV source and the mask blank 10 (See Fig. # 1 of Bokor et al., and col.6, lines 25+).

Response to Arguments

Applicant's arguments with respect to claims 1-39 filed on 12/18/2002 have been considered but are moot in view of the new ground(s) of rejection. The examiner acknowledges applicant's arguments with of the rejections of Bokor et al. in view of Tomii et al. and presents new art rejections to overcome the applicant's remarks.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

La Fontaine et al. (U.S. 6,556,286) discloses inspection system for the pupil of a lithographic tool.

Beillak et al. (U.S. 6,577,389) teaches system and methods for inspection of transparent mask substrates.

La Fontaine (U.S. 6,603,543) discloses inspection system with enhanced contrast.

La Fontaine (U.S. 6,608,321) teaches differential wavelength inspection system.

Lebert et al. (US 2002/0175690) discloses reflectometer arrangement and method for determining the reflectance of selected measurement locations of measurement objects reflecting in a spectrally dependent manner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWYN LABAZE whose telephone number is (703) 305-5437.

The examiner can normally be reached on 7:30 AM - 4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (703) 305-3503. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

el
Edwyn Labaze
Patent Examiner
Art Unit 2876
December 12, 2003

A handwritten signature in black ink, appearing to read 'Thien M. Le', with a stylized, flowing script.

**THIEN M. LE
PRIMARY EXAMINER**